WHAT IS CLAIMED IS:

1. A substantially pure immunoglobulin molecule which binds specifically to A34 antigen.

2. The molecule of claim 1, wherein said molecule comprises an antibody, an $F_v$ fragment, an $F_c$ fragment, an $F_d$ fragment, a Fab fragment, a $F(ab')_2$ fragment, a $F(ab)_2$ fragment, an scFvs fragment, a single chain antibody, a single domain antibody, or a multimeric antibody.

3. The molecule of claim 1, wherein the molecule comprises IgM, IgD, IgG, IgA, or IgE.

4. The molecule of claim 1, wherein said molecule has an affinity for A34 greater than 50nM.

5. The molecule of claim 1, wherein said molecule has an affinity for A34 greater than 5nM.

6. A composition, comprising a therapeutically effective amount of the molecule of claim 1 and at least one pharmaceutically acceptable carrier.

7. A composition, comprising a therapeutically effective amount of an immunoglobulin product that binds to A34 conjugated to an anti-cancer agent, and at least one pharmaceutically acceptable carrier.

8. A method of reducing the effects in a patient of a cancer that expresses A34 antigen, comprising administering to said patient a therapeutically effective amount of an immunoglobulin molecule which binds to A34 protein.

9. A method of reducing the effects in a patient of a cancer that expresses A34 antigen, comprising administering to said patient a therapeutically effective amount of an immunoglobulin product which binds to A34 protein conjugated to an anti-cancer agent.

10. An isolated polynucleotide molecule comprising an isolated polynucleotide encoding A34 protein.

11. An expression vector comprising the isolated polynucleotide molecule of claim 10, wherein said polynucleotide molecule is located in operable relation to at least one promoter.

12. A host cell transformed or transfected with the isolated polynucleotide molecule of claim 10.

13. A host cell transformed or transfected with the expression vector of claim 11.

14. An isolated polypeptide molecule comprising A34, or an antigenic fragment of said A34.

15. The isolated polypeptide of claim 14, wherein said isolated polypeptide comprises SEQ ID NO: 1 or SEQ ID NO: 6.

16. A polypeptide produced by recombinant expression of the isolated polynucleotide molecule of claim 10.

17. A method of diagnosing cancer characterized by the presence of A34 antigen in cancer cells, comprising:

obtaining a sample of cells of interest;

contacting said sample with an agent, which specifically binds A34 antigen, such that A34/agent complexes may be formed; and

detecting the presence or absence of said complexes, wherein the presence of said complexes indicates a positive cancer diagnosis.

18. The method of claim 17, wherein the agent is an antibody, or immunologically active fragment thereof, wherein said antibody or fragment is specific for the A34 protein.

19. The method of claim 17, wherein the agent is a nucleic acid molecule comprising contacting said sample with a nucleic acid molecule which hybridizes to all or part of the nucleic acid molecule of A34.

20. The method of claim 17 wherein said cancer is ovarian, gastric, or esophaegeal cancer.

21. A method for determining regression, progression, or onset of a cancerous condition comprising monitoring a sample from a patient with said cancerous condition for the presence, absence, or change in expression level of A34 antigen comprising:

obtaining a sample of interest;

contacting said sample with at least one agent, which specifically binds A34 antigen, such that A34/agent complexes may be formed; and

detecting the presence, absence or change in of said complexes, wherein the presence, absence, or change in expression level of said complexes indicates progression, regression or onset of cancer diagnosis.

22. The method of claim 21, wherein the at least one agent is an antibody, or immunologically active fragment thereof, wherein said antibody or fragment is specific for the A34 polypeptide.

23. The method of claim 21, wherein the agent is a nucleic acid molecule comprising contacting said sample with a nucleic acid molecule which hybridizes to all or part of the nucleic acid molecule of A34.

24. The method of claim 21 wherein said cancer is ovarian, gastric, or esophaegeal cancer.

25. The immunoglobulin molecule of any one of claims 1-4, wherein said immunoglobulin molecule is humanized.

26. The immunoglobulin molecule of any one of claims 1-4, wherein said immunoglobulin molecule is fully human.

27. The immunoglobulin molecule of any one of claims 1-4, wherein said immunoglobulin molecule is recombinant.

28. An immunoglobulin molecule that binds to A34 conjugated to at least one anti-cancer agent.

29. The immunoglobulin molecule according to claim 28, wherein said anti-cancer agent is selected from the group consisting of radioisotopes, chemotherapeutic agents, or cytotoxic agents.

30. The immunoglobulin molecule according to claim 29, wherein said agent is a radioisotope selected from the group consisting of $^{125}I$, $^{131}I$, $^{99}Tc$, $^{90}Y$ and $^{111}In$.

31. The immunoglobulin molecule according to claim 28, wherein said agent comprises a chemotherapeutic agent or cytotoxic agent selected from the group consisting of QFA, antifolates, BCNU (carmustine), mercaptopurine, methotrexate, docetaxel, adriamycin, calicheamicin

cellular toxin, bacterial toxin, pseudomonas exotoxin, ricin, and diptheria toxin.

32. The immunoglobulin molecule according to claim 29, wherein said agent comprises at least one of a whole toxin or a particular domain of a toxin.

33. A method for determining if cancer cells which express A34 are present in a sample, comprising:

contacting a sample of interest with at least one oligonucleotide molecule which specifically hybridizes to a nucleic acid molecule which encodes A34, wherein hybridization of said at least one oligonucleotide molecule to a nucleic acid molecule is indicative of cancer cells which express A34 in said sample; and

detecting the presence or absence of such hybridization, wherein the presence of said hybridization indicates the presence of cancer cells which express A34.

34. An isolated polynucleotide molecule comprising a polynucleotide sequence which is an antisense sequence of A34.

35. The substantially pure immunoglobulin molecule according to claim 1, where the immunoglobulin molecule binds to an extracellular portion of A34.

36. The substantially pure immunoglobulin molecule according to claim 1, comprising at least one variable region, wherein the variable region comprises at least one CDR3 sequence selected from the group consisting of SEQ ID NO: 34, SEQ ID NO: 37, SEQ ID NO: 40, SEQ ID NO: 43, SEQ ID NO: 46, or SEQ ID NO: 49.

37. The substantially pure immunoglobulin molecule according to claim 1, comprising at least one heavy chain variable region, wherein the heavy chain variable region comprises at least one CDR3 sequence selected from the group consisting of SEQ ID NO: 37, SEQ ID NO: 43, or SEQ ID NO: 49.

38. The substantially pure immunoglobulin molecule according to claim 1, comprising at least one heavy chain variable region, wherein the heavy chain variable region comprises at least one CDR3 sequence selected from the group consisting of SEQ ID NO: 37, SEQ ID NO: 43, or SEQ ID NO: 49; and one light chain variable region wherein the light chain variable region comprises at least one CDR3 sequence selected from the group consisting of SEQ ID NO: 34, SEQ ID NO: 40, or SEQ ID NO: 46.

39. The substantially pure immunoglobulin molecule according to claim 1, comprising a heavy chain variable region comprising three CDR regions selected from the group consisting of SEQ ID NO: 35, SEQ ID NO: 36, SEQ ID NO: 37, SEQ ID NO: 41, SEQ ID NO: 42, SEQ ID NO: 43, SEQ ID NO: 47, SEQ ID NO: 48, and SEQ ID NO: 49.

40. The substantially pure immunoglobulin molecule according to claim 1, comprising a light chain variable region comprising three CDR regions selected from the group consisting of SEQ ID NO: 32, SEQ ID NO: 33, SEQ ID NO: 34, SEQ ID NO: 38, SEQ ID NO: 39, SEQ ID NO: 40, SEQ ID NO: 44, SEQ ID NO: 45, and SEQ ID NO: 46.

41. The substantially pure immunoglobulin molecule according to claim 1, comprising a heavy chain variable region comprising three CDR regions selected from the group consisting of SEQ ID NO: 35, SEQ ID NO: 36, SEQ ID NO: 37, SEQ ID NO: 41, SEQ ID NO: 42, SEQ ID NO: 43, SEQ ID NO: 47, SEQ ID NO: 48, and SEQ ID NO: 49, and a light chain variable region comprising three CDR regions selected from the group consisting of

SEQ ID NO: 32, SEQ ID NO: 33, SEQ ID NO: 34, SEQ ID NO: 38, SEQ ID NO: 39, SEQ ID NO: 40, SEQ ID NO: 44, SEQ ID NO: 45, and SEQ ID NO: 46.

42. The substantially pure immunoglobulin molecule according to claim 1, comprising a light chain variable region comprising at least one CDR region selected from the group consisting of SEQ ID NO: 32, SEQ ID NO: 33, and SEQ ID NO: 34, and a heavy chain variable region comprising at least one CDR region selected from the group consisting of SEQ ID NO: 35, SEQ ID NO: 36, and SEQ ID NO: 37.

43. The substantially pure immunoglobulin molecule according to claim 1, comprising a light chain variable region comprising at least one CDR region selected from the group consisting of SEQ ID NO: 38, SEQ ID NO: 39, and SEQ ID NO: 40, and a heavy chain variable region comprising at least one CDR region selected from the group consisting of SEQ ID NO: 41, SEQ ID NO: 42, and SEQ ID NO: 43.

44. The substantially pure immunoglobulin molecule according to claim 1, comprising a light chain variable region comprising at least one CDR region selected from the group consisting of SEQ ID NO: 44, SEQ ID NO: 45, and SEQ ID NO: 46, and a heavy chain variable region comprising at least one CDR region selected from the group consisting of SEQ ID NO: 47, SEQ ID NO: 48, and SEQ ID NO: 49.

45. The substantially pure immunoglobulin molecule according to claim 1, comprising at least one heavy chain variable region selected from SEQ ID NO: 23, SEQ ID NO: 27, and SEQ ID NO: 31.

46. The substantially pure immunoglobulin molecule according to claim 1, comprising at least one light chain variable region selected from SEQ ID NO: 21, SEQ ID NO: 25, and SEQ ID NO: 29.

47. The substantially pure immunoglobulin molecule according to claim 1, comprising at least one heavy chain variable region selected from SEQ ID NO: 23, SEQ ID NO: 27, and SEQ ID NO: 31 and one light chain variable region selected from SEQ ID NO: 21, SEQ ID NO: 25, and SEQ ID NO: 29.